# COMPAQ DESKPRO 386/25 PERSONAL COMPUTER OPTIONS LIST

Following is a list of available options (from your Authorized COMPAQ Computer Dealer) for the COMPAQ DESKPRO 386/25 Personal Computer.

- 5¼-Inch 1.2-Megabyte Half-Height Diskette Drive
- 5¼-Inch 360-Kbyte Half-Height Diskette Drive
- 3½-Inch 1.44-Megabyte Half-Height Diskette Drive
- 300-/600-Megabyte Fixed Disk Drive Expansion Unit
- 300-Megabyte Full-Height Fixed Disk Drive
- 110-Megabyte Half-Height Fixed Disk Drive
- 135-Megabyte Fixed Disk Drive Backup (Tape)
- 40-Megabyte Fixed Disk Drive Backup (Tape)
- 1-Megabyte 32-Bit Memory Module
- 4-Megabyte 32-Bit Memory Module
- 4-Megabyte System Memory Board
- Weitek Coprocessor
- 25-MHz 80387 Numeric Coprocessor
- COMPAQ Video Graphics Color Monitor
- COMPAQ Video Graphics Monochrome Monitor
- COMPAQ Video Graphics Controller Board
- COMPAQ Dual-Mode Monitor (amber or green)
- COMPAQ Video Display Controller Board
- Asynchronous Communications/Parallel Printer Board
- *COMPAQ DESKPRO 386/25 Technical Reference Guide*
- *COMPAQ Video Graphics System Technical Reference Guide*
- MS-DOS/BASIC as Published by Compaq Computer Corporation
- Microsoft® Operating System/2 as Published by Compaq Computer Corporation
- 135-Megabyte Tape Cartridge
- 40-Megabyte Tape Cartridge

*Part Number 115540-001*

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# Addendum 112690-001 (9-88) to Manual No. 115538-001

## USER PROGRAMS REFERENCE

Changes have been made to the disk CACHE utility on the USER PROGRAMS diskette. To update your USER PROGRAMS REFERENCE, follow the steps below.

Please remove and replace the following pages with the like-numbered pages of this addendum.

- The Notice page.
- Page 1-5.
- Pages 3-8 through 3-12.
- Appendix A.

# NOTICE

The information in this guide is subject to change without notice.

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*USER PROGRAMS REFERENCE*

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**Compaq Computer Corporation**

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# HOW TO USE THIS GUIDE

Use the following cross reference to determine which utilities are designed for use with your computer.

**Table 1-1.**
**Computer/Utility Cross Reference**

| | ADAPT | CACHE | CEMM | CHARSET | CLOCK | HELP | INSTALL | KEYBDP | KP | MODE ATTRIBUTE | MODE MEMCACHE | MODE SCREENSAVE | MODE SELECT | MODE SPEED | VDISK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COMPAQ DESKPRO 386/25 | | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | ✓ |
| COMPAQ DESKPRO 386/20 | | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | ✓ |
| COMPAQ DESKPRO 386/20e | | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ | | ✓ | | ✓ | ✓ | ✓ |
| COMPAQ DESKPRO 386 | | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | | ✓ | ✓ | ✓ |
| COMPAQ DESKPRO 386s | | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ | | | | ✓ | ✓ | ✓ |
| COMPAQ DESKPRO 286 | | ✓ | | ✓ | | ✓ | ✓ | | | | | | ✓ | ✓ | ✓ |
| COMPAQ DESKPRO | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | ✓ | ✓ | ✓ |
| COMPAQ PORTABLE 386 | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ | ✓ | ✓ |
| COMPAQ PORTABLE III | ✓ | ✓ | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ | ✓ | ✓ |
| COMPAQ PORTABLE II | | ✓ | | ✓ | | ✓ | ✓ | | | | | | ✓ | ✓ | ✓ |

3. The CURRENT SETTING Portion of the screen contains two displays:

   - The *Attribute feature ON* line shows the appearance of highlighted text for the option selected. For example, if you selected the option *Underline,* the words *Attribute feature ON* will be underlined.

   - The *Attribute feature OFF* line shows how the remaining text (that is, text that is not highlighted) will appear in your application.

   When you have made your selection, press the ESC key to exit from this menu. The ADAPT Main Menu reappears.

4. To exit from ADAPT, press the ESC key.

Setting Screen-Save

1. After activating ADAPT, if you select the *Set the Inactivity Period for Screen-Save* option from the ADAPT Main Menu, an inactivity period selection screen is displayed.
2. Enter the desired inactivity period for the screen-save feature. This can be any number of minutes between 1 and 63. If "00" is selected, the screen-save feature is disabled.
3. Your current selection is shown in the CURRENT SETTING portion of the screen. When you have made your selection, press the ESC key to exit from this menu. The ADAPT Main Menu reappears.
4. To exit from ADAPT, press the ESC key.

# CACHE

The disk CACHE utility can improve performance by decreasing the time needed to access fixed disk data. Copies of the most recently accessed data and the data expected to be accessed next are placed in a portion of memory called the disk cache. Each time a sector of data is requested, the system checks to see if the data is already in the disk cache. If it is there, the data is transferred to main memory without performing a disk-read operation. This greatly reduces the amount of time needed to retrieve data in applications that are disk-read intensive.

The CACHE utility also allows you to use the queued writes option. A queued write consists of writing one sector of data into the queue. Once queued, control is returned to the application you are using. The queued writes option improves performance in applications that perform single sector writes.

The CACHE utility consists of a device driver, *CACHE.EXE,* which is also used as a command file. The CACHE command sets the status of the CACHE device driver and clears or displays disk cache statistics. It also allows you to enable or disable CACHE without resetting the system.

For more information on disk caching, refer to Appendix A, "Disk Caching."

## The CACHE.EXE Device Driver

Before you can use disk caching, you must install the *CACHE.EXE* device driver in the *CONFIG.SYS* file. This establishes the disk cache and determines the size of the disk cache.

| | |
|---|---|
| **Purpose:** | To allow use of disk caching. |
| **Operating System:** | MS-DOS |
| **Syntax:** | DEVICE = [*d:*][*path*]CACHE.EXE [*vvv*] [ON\|OFF] [/BAS\|/EXT\|/EXP] [/Q] |
| **Installation Method:** | Use INSTALL or modify the *CONFIG.SYS* file. |
| **Parameters:** | *vvv*<br>This parameter indicates the size of the disk cache in Kbyte units. The default is 256 Kbytes. Values can range from 128 to 2048 Kbytes. All specified values are rounded down to the nearest 16-Kbyte increment or to the amount of available memory.<br><br>ON<br>This parameter sets the initial state of the *CACHE.EXE* driver to ON. Use this parameter in your *CONFIG.SYS* file to install disk caching, and have it initially enabled. ON is the default. You can disable disk caching later by entering CACHE OFF.<br><br>OFF<br>This parameter sets the initial state of the *CACHE.EXE* driver to OFF. Use this parameter in your *CONFIG.SYS* file to install disk caching, but have it initially disabled. You can enable disk caching later by entering CACHE ON. |

*Continued*

/BAS
This parameter specifies that memory to be used for cache is allocated from base memory. Base memory is the memory between 0 and 640 Kbytes.

/EXT
This parameter specifies that memory to be used for cache is allocated from extended memory. Extended memory is all memory above 1 megabyte.

/EXP
This parameter specifies that the memory to be used for the disk cache is allocated from expanded memory. Expanded memory is paged memory as defined in the Lotus/Intel®/Microsoft (LIM) Expanded Memory Specification (EMS) standard. For more information on expanded memory, refer to Appendix B, "Memory Configuration." This is the default setting.

/Q
This parameter specifies that the queued writes option is enabled. A queued write consists of writing one sector of data into the queue. If this parameter is not specified, queued writes will not be performed. If you include a CACHE NOQUEUE command in your *AUTOEXEC.BAT* file and include the /Q switch with the *CACHE.EXE* device driver in your *CONFIG.SYS* file, the queued writes option is available but initially disabled.

**Comments:** Install the CACHE device driver by using the USER PROGRAMS INSTALL utility or by modifying the *CONFIG.SYS* file. Use of the INSTALL utility is covered in the "INSTALL" section in this chapter.

If you choose to install the CACHE utility by modifying the *CONFIG.SYS* file without the use of the INSTALL utility, refer to Appendix C, "Installation Notes." The physical sector size must be 512 bytes for CACHE to run.

## The CACHE Command

After you install the CACHE device driver, use the CACHE command to set the status of the CACHE device driver, to clear or display the disk cache statistics, or to access a HELP screen. For more information on disk caching, refer to Appendix A, "Disk Caching."

| | |
|---|---|
| **Purpose:** | To set the status of the CACHE device driver to ON or OFF, to clear disk cache statistics, to display disk cache statistics, or to access a HELP screen. |
| **Operating System:** | MS-DOS |
| **Syntax:** | [*d:*][*path*]CACHE [ON\|OFF\|QUEUE\|NOQUEUE\|CLEAR\|HELP] |
| **Command Type:** | External |
| **Parameters:** | ON<br>This parameter turns on disk caching and displays the CACHE read statistics screen.<br><br>OFF<br>This parameter turns off disk caching and displays the CACHE read statistics screen. Any memory assigned to CACHE is released immediately and made available to other applications. This parameter also disables the queued writes option if the /Q switch is specified with DEVICE = CACHE.EXE in your *CONFIG.SYS* file.<br><br>QUEUE<br>This parameter enables the queued writes option if the /Q switch is specified with DEVICE = CACHE.EXE in your *CONFIG.SYS* file. This parameter also turns on disk caching if it was OFF. |

*Continued*

NOQUEUE
This parameter disables the queued writes option if the /Q switch is specified with DEVICE = CACHE.EXE in your *CONFIG.SYS* file. This parameter does not turn disk caching ON or OFF.

CLEAR
This parameter sets the read statistics to zero.

HELP
This parameter displays a screen with instructions for installing CACHE.

(None)
If no parameters are specified, the CACHE status and CACHE read statistics are displayed.

**Comments:**

Disk read-intensive applications such as databases benefit the most from disk caching. Performance on other types of applications is usually not affected. If you notice a
decrease in performance, turn disk caching off with this command:

```
CACHE OFF
```

When you reset your computer, the status of CACHE returns to the default settings in the *CONFIG.SYS* file.

# DISK CACHING

Disk caching can improve performance by decreasing the time needed to access fixed disk data. Copies of the most recently accessed data and the data expected to be accessed next are placed in a portion of memory called the disk cache. Since data transfer rates from memory are many times faster than fixed disk transfer rates, most disk read-intensive applications, such as databases, show improved performance with disk caching. Other applications, such as spread sheets and word processing systems, may show little or no gain in performance.

Each time a sector of data is requested, the *CACHE.EXE* device driver reads both the requested sector and adjacent sectors. On the next request, the system checks to see if the requested data is already in the disk cache. If it is there, no disk-read operation is performed, and the requested data is transferred from the disk cache memory to the main memory.

The number of sectors stored in disk cache memory is dependent on the amount of memory allocated for disk cache in your *CONFIG.SYS* file. When the disk cache is full, sectors that have been in the cache the longest without being accessed are replaced with the data being requested. This allows the data being used most frequently to remain in the cache. To determine the amount of memory to allocate to disk cache for optimum performance, experiment with various disk cache sizes using your application and data files.

If the read request is for a large number of sectors, data is not put into the disk cache. An example of when this might occur is when a large program is loaded. In this instance, the data is not put into the disk cache, thereby causing the fixed disk drive to be accessed if the program is reloaded.

If the operation being performed is a write command, the data in the disk cache is updated prior to the actual disk-write operation. This ensures that the data in the cache and the data on the disk match before returning to the program.

If the write is a single sector write and that sector is already in the cache, the sector to be written and the one on the disk will be compared. If they are identical, the write to the disk will not be executed. If the sectors differ, the new sector will overwrite the sector in the cache. This write will then be queued. Once queued, control will be returned to your application so that you do not have to wait for the disk controller to find the correct sector on the disk. This technique, called queued writes, makes some applications many times faster since the applications work on single sectors exclusively.

In some cases, disk caching does not increase system performance and you should disable the disk cache. This can occur if an application program reads data from the fixed disk drive in a random fashion such that only one sector of data is used from each disk cache access. In that situation, the added overhead of repeatedly moving unused data from the fixed disk drive to the disk cache causes a decrease in performance.

Disk caching is not supported for a diskette drive because the diskette can be removed and replaced with a different diskette without the disk caching program being aware of it. Access to network files is not cached because the request is routed to the network server in a manner different from normal disk requests.